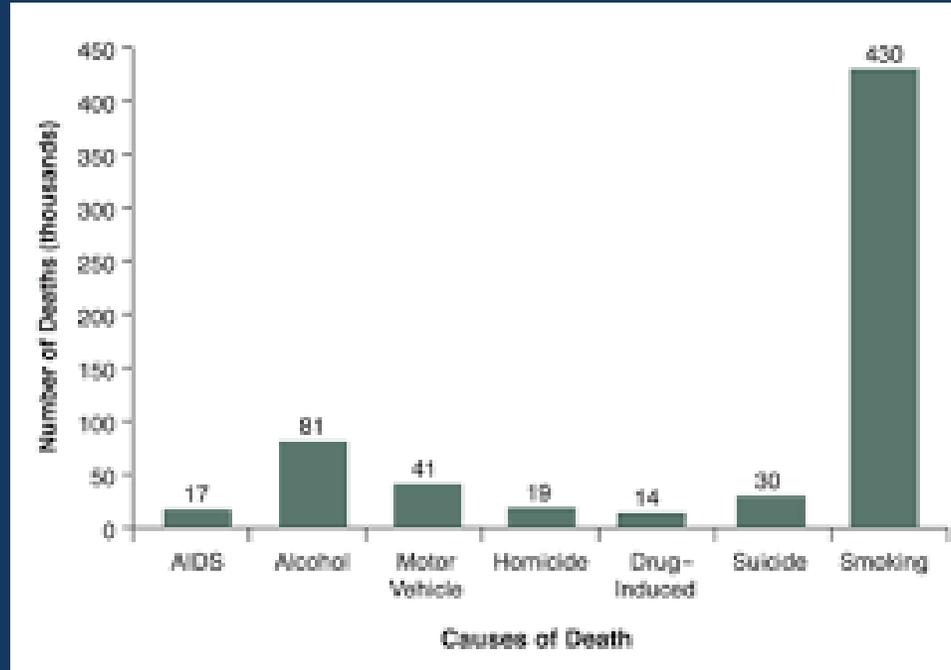


TOBACCO AND OPIOIDS

Carolyn Warner-Greer MD MS FACOG FASAM
Otis R Bowen Center for Health and Human Services

BOWEN
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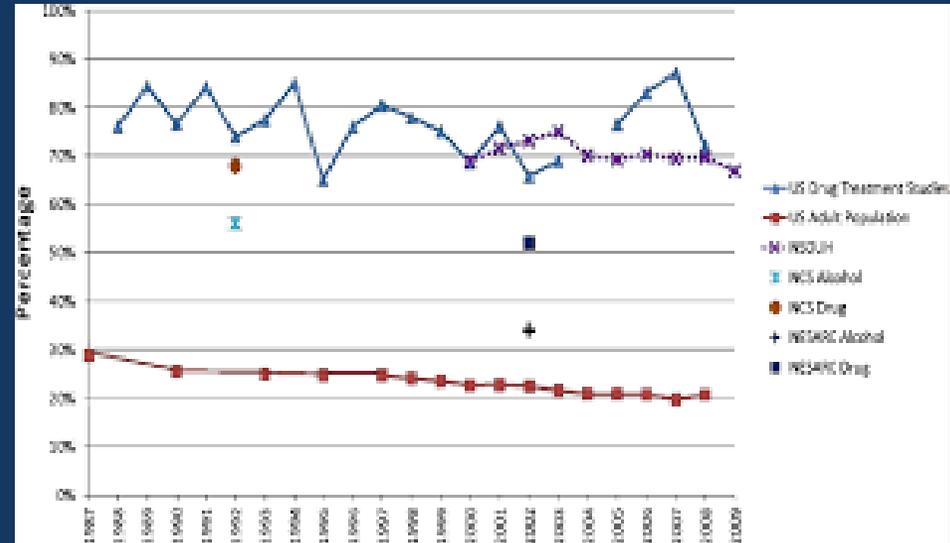
COMPARATIVE CAUSES OF DEATH IN THE US



TOBACCO USE IS DECLINING

- IN 1963, AMERICANS SMOKED ENOUGH CIGARETTE FOR EVERY ADULT TO SMOKE MORE THAN ½ PACK A DAY
- TODAY, LESS THAN 15 % OF ADULT AMERICANS SMOKE
- THIS HAS DECLINED FROM 21% IN 2005

DISPROPORTIONATE PREVALANCE



Guydish, 2011

BOWEN RECOVERY CENTER



- ONE OF 5 NEW OTP'S LICENSED BY DMHA IN 2018; OPENED **6-14-18**
- WAIT.....





BOWEN RECOVERY CENTER

- ONE OF 5 NEW OTP'S LICENSED BY DMHA IN 2018; OPENED **6-14-18**
- ENROLLED 349 CLIENTS-ALL HAVE SEVERE OUD, TREATED WITH MTD
- 100% HAVE DOCUMENTED TOBACCO USE HISTORY AT INTAKE
- INITIAL RATE: 91.7%

“THE UNHEALTHY CONNECTION”

Tobacco addiction among people with substance use disorders

- 95% smoke when entering treatment
 - Increased risk for those with oud
- Increased risk of tobacco related death
 - Health insurance costs



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- INCREASE INDIANA CIGARETTE TAX BY **\$2.00**
- PREVENT 48,700 <18 YO FROM STARTING
- INCREASED FUNDING FOR :
 - PROGRAMMING AT SUBSTANCE USE TREATMENT CENTER FOR TOBACCO CESSATION
 - PROVISION OF CESSATION PRODUCTS
 - DEVELOPMENT OF TECHNOLOGY
- (RAISE LEGAL AGE TO 21 YEARS)

SMOKING BEHAVIOR AMONG PERSONS WITH OUD

- HIGHER RATE OF TOBACCO USE
- HIGHER NUMBER OF CIGARETTES SMOKED/DAY
 - LOWER CESSATION RATE

Tobacco related mortality WITH OUD

- Tobacco related illness is a major cause of death:
 - 51% died of tobacco related causes
 - Death rate of smokers was 4 times higher than that of non-smokers

Hurt et al, JAMA, 1996

SMOKING THREATENS RECOVERY; CESSATION PROMOTES IT

| STUDY | FINDING |
|--|---|
| National Epidemiologic Study (Weinbeger et al. 2017) | Tobacco use initiation or continuation increases risk of relapse |
| Meta Analysis of 19 RCT (Prochaska et al. 2004) | 25% increased likelihood of long term abstinence from alcohol and drugs |
| RCT (Shoptaw et al. 2002) | Smoking cessation correlates with opioid and cocaine abstinence |



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The brain, opioids and tobacco

NICOTINE-->NEUROTRANSMITTERS



- PERIPHERAL-EPINEPHRINE
- CENTRAL-DOPAMINE, EPINEPHRINE, ENDOGENOUS OPIOIDS
- GENETICS-MOR A118G
- BLOCK NA-VTA → DECREASED TOBACCO USE?

**CIGARETTES ARE THE MOST
ADDICTIVE DRUG OF ABUSE**

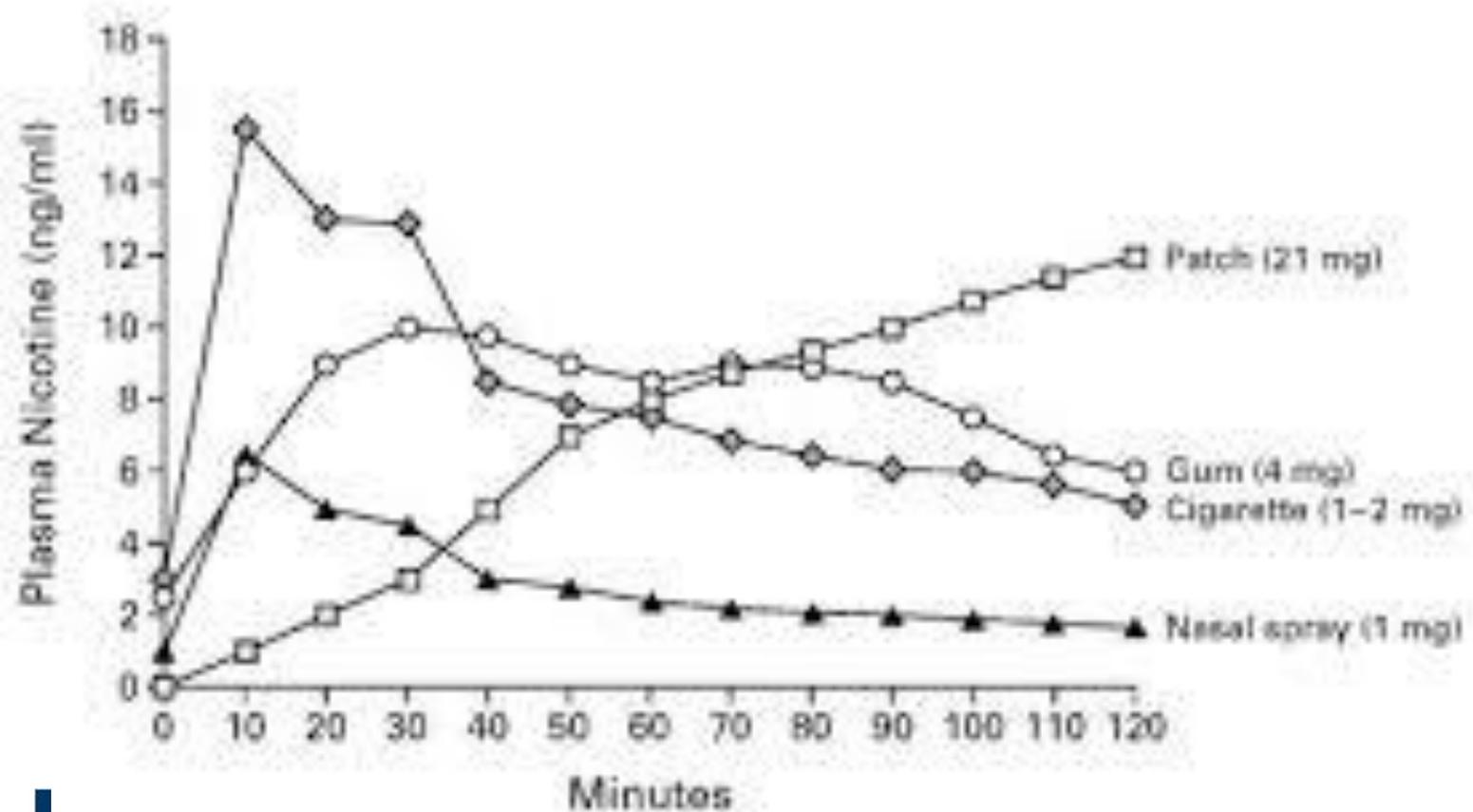


"THE EXPERIENCE OF SMOKING FOR ME, WHEN I'M JONESING AND I TAKE IN THAT FIRST HIT, IT'S LIKE SCRATCHING AN ITCH. IT'S LIKE TAKING A DRINK ON A REALLY THIRSTY DAY. IT'S LIKE TAKING A BREATH OF AIR WHEN YOU'VE HAD YOUR HEAD UNDER WATER AND YOU POP BACK UP."



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CIGARETTES-THE ULTIMATE DELIVERY MODEL



HOW CAN WE HELP PERSONS WITH OUD STOP
SMOKING?

PROVIDE EVIDENCED BASED TREATMENT

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CENTER

WHAT IS THE EVIDENCE?

- IN OPIOID TREATMENT USING MEDICATIONS
 - METHADONE>BUPRENORPHINE
- SMOKERS INTERESTED IN QUITTING
- BEHAVIORAL AND PHARMACOLOGICAL INTERVENTIONS

HOW ARE OUD TREATMENT PROGRAMS DOING?

- MULTIPLE SURVEYS OF SUD PROGRAMS:
 - 18-45% PROVIDE SMOKING CESSATION COUNSELING
 - 12-33% PROVIDE CESSATION PHARMACOTHERAPY
 - NUMBER OF PEOPLE TREATED IS LOW
 - DECLINE IN TREATMENT PROVISION OVER TIME

RICHTER ET AL, 2004; FRIEDMANN ET AL,
JSAT 2008, HUNT ET AL, JSAT 2012, EBY ET AL.
JSAT 2015

BRIEF COUNSELING: THE 5 A'S

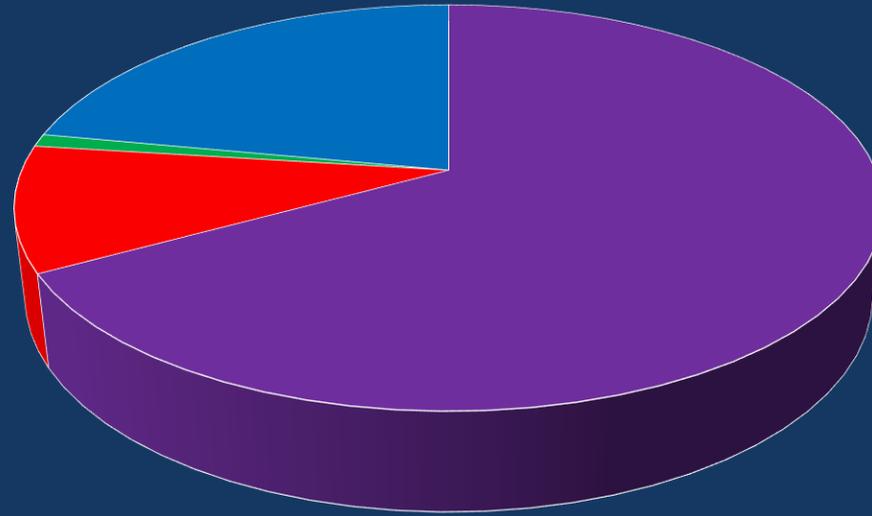
- **ASK** ABOUT TOBACCO USE
- **ADVISE** TO QUIT
- **ASSESS** WILLINGNESS TO QUIT
- **ASSIST** IN QUIT ATTEMPT
- **ARRANGE** FOLLOW UP



ASK: SMOKING STATUS AT FQHC

PATIENTS TREATED WITH BUP

NAHVI, JSAT 2014



■ CURRENT SMOKERS

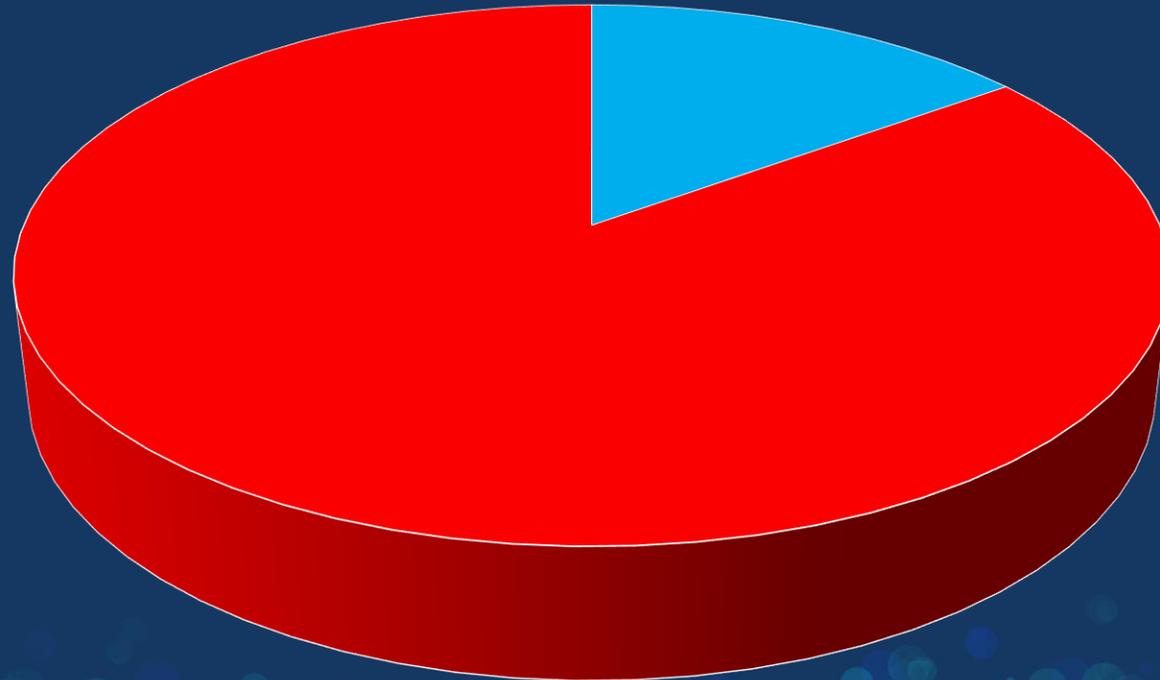
■ FORMER SMOKERS

■ NEVER SMOKED

■ NO STATUS DOCUMENTED

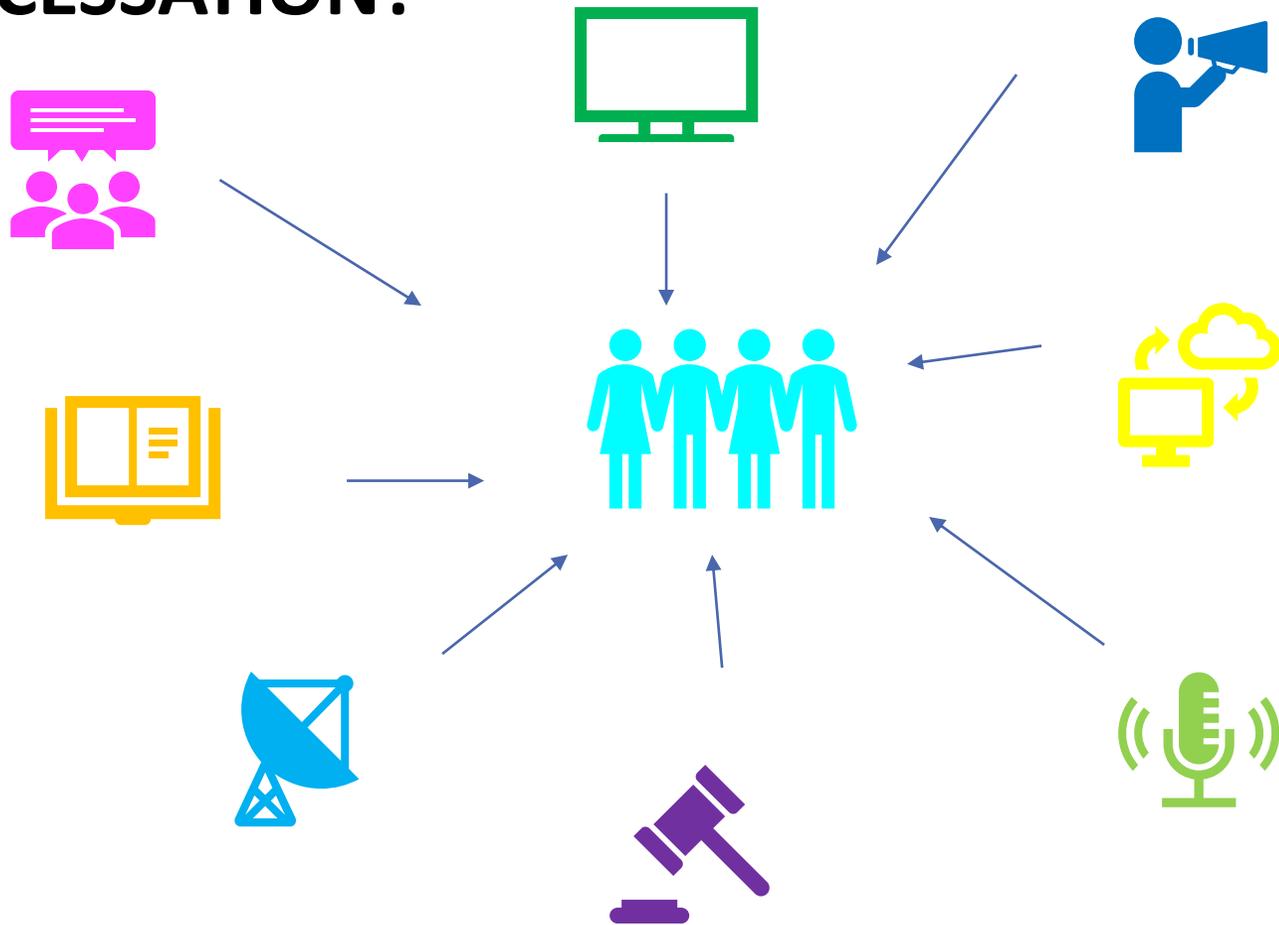
SMOKING CESSATION TREATMENT

SMOKERS IN OUD TREATMENT



■ PRESCRIBED MEDS ■ NOT PRESCRIBED

IF NOT USE, WHO PROVIDES INFORMATION ON CESSATION?



MISCONCEPTIONS ABOUT SMOKING CESSATION AND SUD POPULATION

- LIMITED PERCEIVED EFFICACY
- OVERESTIMATED RISKS
- PERSON PROVIDING INFORMATION ALSO SMOKES



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PAM IS A 62 YEAR OLD WOMAN WHO HAS BEEN IN LONG TERM RECOVERY FROM HEROIN USE AND IN METHADONE MAINTENANCE THERAPY. SHE HAS BEEN HOSPITALIZED TWICE FOR PNEUMONIA. SHE HAS NEVER STOPPED SMOKING AND DOESN'T WANT TO STOP.

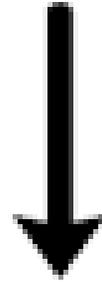


BRIEF COUNSELING INTERVENTION

- 2ND "A"-ADVISE
- 3RD "A"-ASSESS



PROGRESS



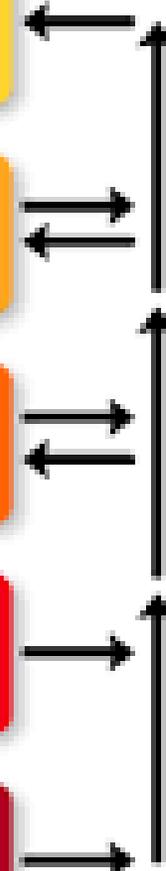
Precontemplation

Contemplation

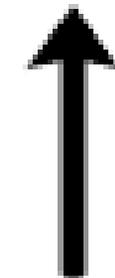
Preparation

Action

Maintenance



RELAPSE



MOTIVATIONAL 5R'S FOR SMOKERS NOT READY TO QUIT

- **RELEVANCE** TO QUITTING SMOKING
- **RISKS** ASSOCIATED WITH CONTINUED SMOKING
- **REWARDS** TO BEING TOBACCO FREE
- **ROADBLOCKS** TO SUCCESSFULLY QUITTING
- **REPETITION** OF ASSESSMENT

Drug interactions with tobacco use

- INDUCTION OF CYP1A2 INCREASES METABOLISM OF METHADONE AND BUPRENORPHINE
- REAL CONCERN IS TO ADDRESS POTENTIAL SEDATION WITH TOBACCO CESSATION
- HOWEVER...WORKS BOTH WAYS!

EVIDENCE BASE IS LIMITED

- ONLY THREE TRIALS INCLUDE SMOKERS EVEN IF THEY WERE PRECONTEMPLATIVE
- BUT...
 - ENHANCED CESSATION
 - IMPROVED HEALTH
 - ENGAGED SMOKERS NOT READY TO QUIT

PAM HAS BEEN IN THE EMERGENCY DEPARTMENT THREE TIMES THIS MONTH FOR DYSPNEA AND HAS TROUBLE WALKING THROUGH THE OTP EACH DAY. SHE NOW IS ASKING ABOUT HELP WITH CESSATION.

BRIEF COUNSELING INTERVENTION

- 4TH "A"-ASSIST
 - BRIEF (3 MINUTE) COUNSELING BY PHYSICIAN INCREASES CESSATION RATE BY 30%
 - DOSE RESPONSE BETWEEN NUMBER OF CLINICIAN TYPES OFFERING COUNSELING AND CESSATION SUCCESS
 - COUNSELORS

COUNSELORS/CASE MANAGERS IN OTP SETTING

- FREQUENT PATIENT CONTACT
- SKILLS TO ASSESS OUD SAME AS ADDRESSING TOBACCO USE
- BRC-60% PATIENTS IN SUSTAINED REMISSION FROM OUD
- GREAT OPPORTUNITY



NO CESSATION WITH LOW INTENSITY COUNSELING

- THREE RCT'S
 - (2) OTP'S, (1) OBOT
 - MINIMAL EFFICACY REFLECTS LOW ADHERENCE AND LOW UPTAKE

INTERVENTIONS WITH COUNSELORS IN SUD TREATMENT

- ADD TO ELECTRONIC HEALTH RECORD
- ADDRESS DURING COUSELING SUPERVISION

Do you smoke?

No

I quit

I smoke less than 10 a day

I smoke less than 20 a day

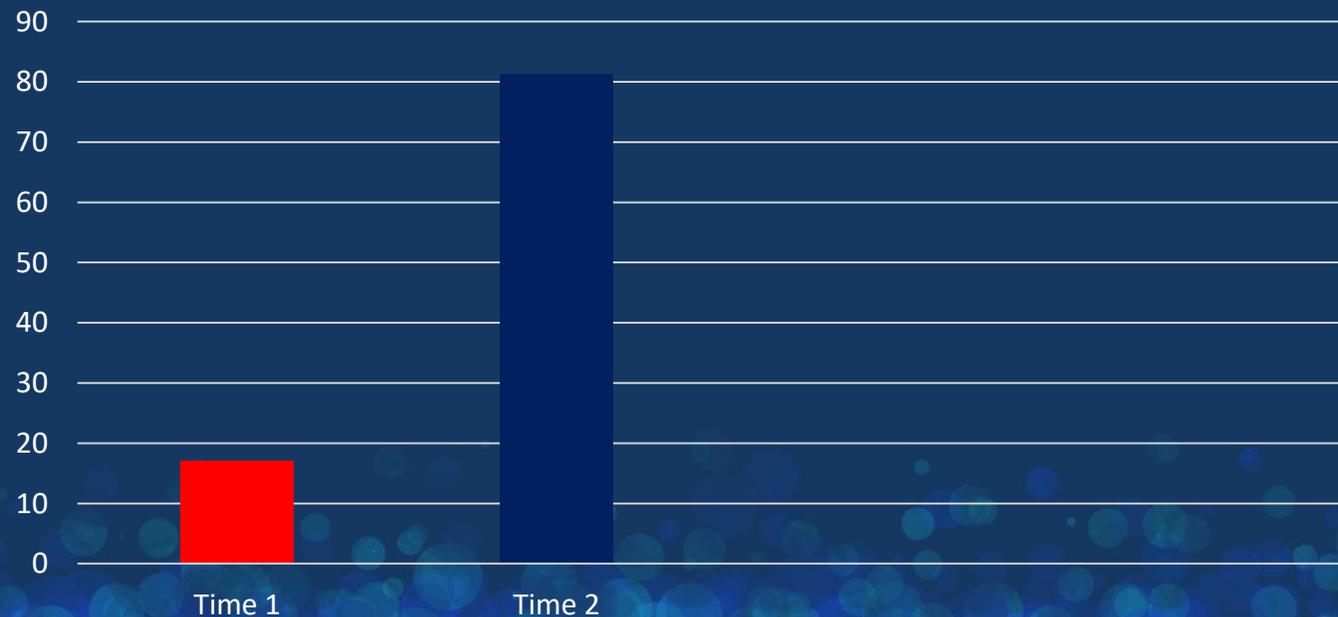
I smoke 20+ a day

[Switch to metric](#)

Height

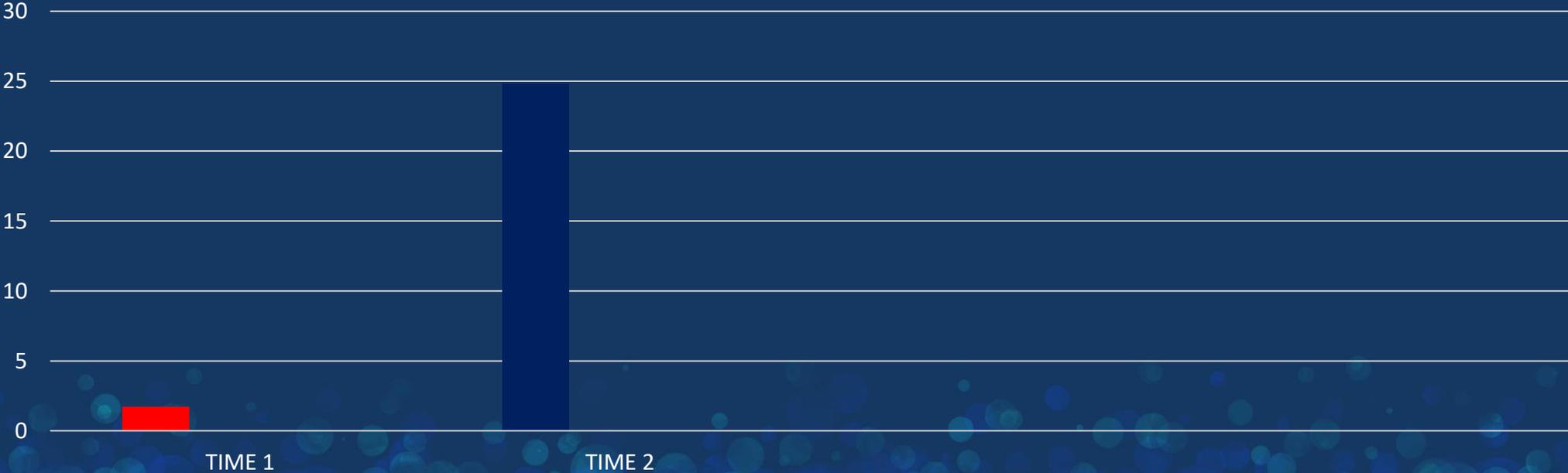
IMPACT OF ADDING TOBACCO CESSATION TO EHR

IDENTIFICATION OF TOBACCO USE



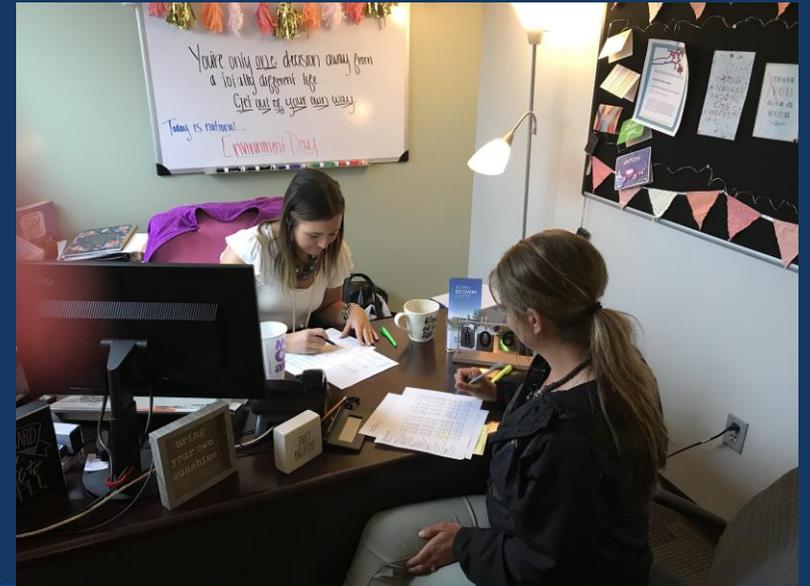
IMPACT OF ADDING TOBACCO CESSATION TO EHR

PERCENTAGE OF COUNSELING ENCOUNTERS



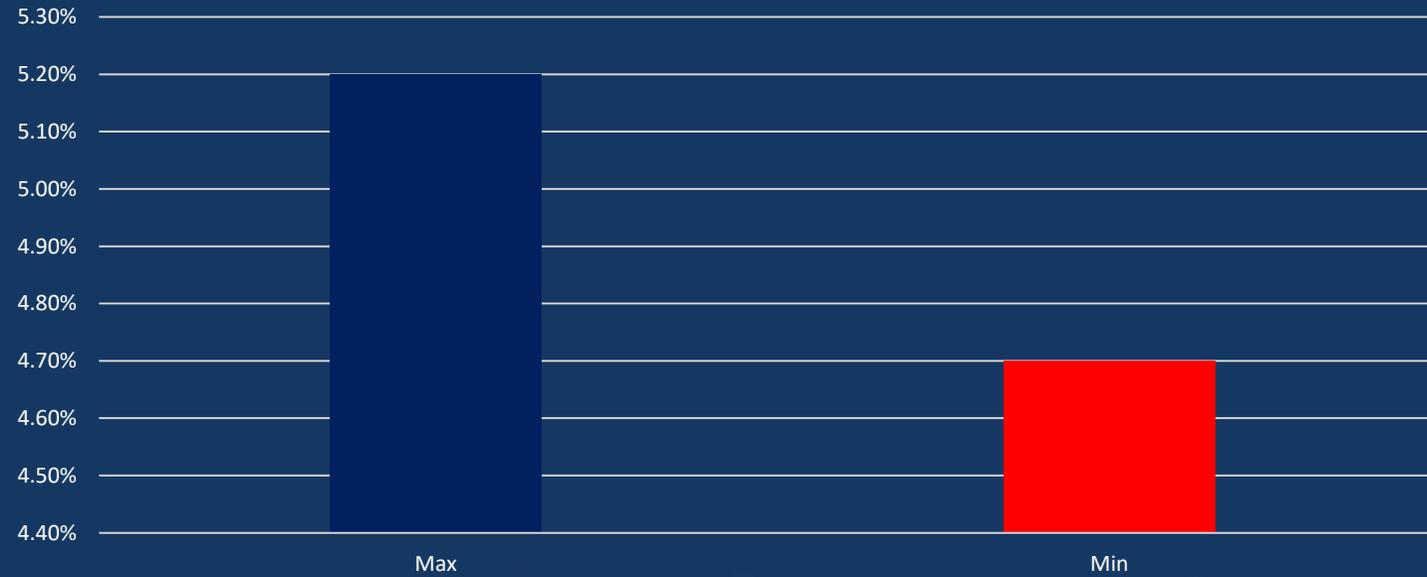
ORGANIZATIONAL CHANGE INTERVENTION

- NOT JUST CHANGE IN EHR
- **ALL** STAFF TRAINING
- POLICY DEVELOPMENT
- LEADERSHIP SUPPORT
- ACCESS TO NRT
- INCENTIVE FOR PRODUCTIVITY, SIMILAR TO Meaningful USE?



MOTIVATION INTERVIEWING

TOBACCO ABSTINENCE



STEIN, ADDICTION 2006

CONTINGENCY MANAGEMENT

- POTENT SHORT TERM EFFECTS
- EFFECTS NOT MAINTAINED



QUITLINE EFFICACY FOR PATIENTS WITH OUD

- MULTIPLE CALLS INCREASES (OR 1.41) SUCCESSFUL QUIT ATTEMPTS
- EFFICACY FOR LONG TERM CESSATION
- EFFICACY IN REACING RACIAL/ETHNIC MINORITY SMOKERS



TELEPHONE QUITLINE REFERRAL

- 112 PATIENTS AT OTP WHO ALSO SMOKE IN CLINICAL TRIAL
- ALL OFFERED TELEPHONE QUIT LINE REFERRAL
- 22% UTILIZED THE QUITLINE COUNSELING
 - COMPARABLE TO PRIMARY CARE
 - MUCH HIGHER THAN POPULATION BASED

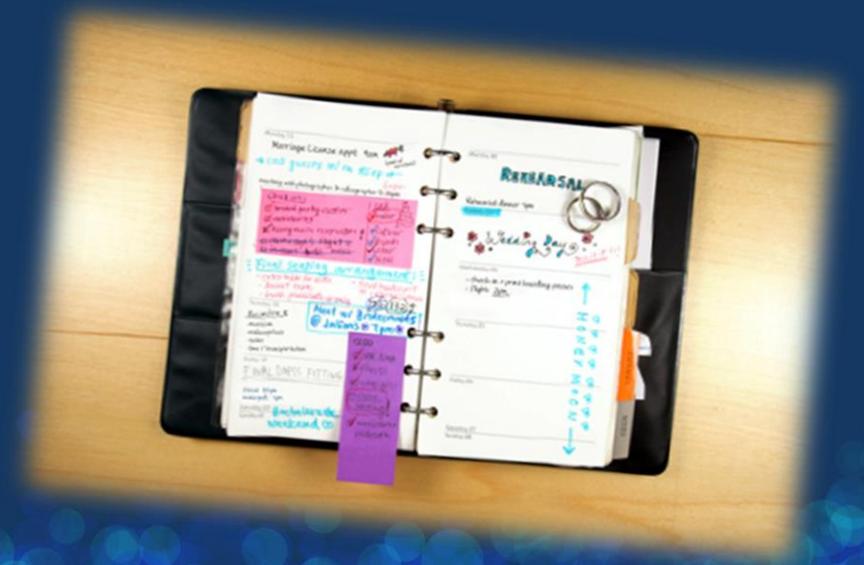
GRIFFIN ET AL. NIC AND TB RSCH 2016

TELEPHONE QUITLINE BARRIERS

| BASELINE TELEPHONE ACCESS | N (%) |
|-----------------------------|----------|
| NO CELLPHONE | 15 (13%) |
| CELLPHONE SERVICE LAPSE | 31 (28%) |
| PROBLEMS CHARGING CELLPHONE | 15 (13%) |
| RUNNING OUT OF MINUTES | 28 (25%) |
| NO LANDLINE | 57 (51%) |

TELEPHONE QUITLINE BARRIERS

- COMPETING LIFE DEMANDS
- SKEPTICAL OF QUITLINE EFFICACY

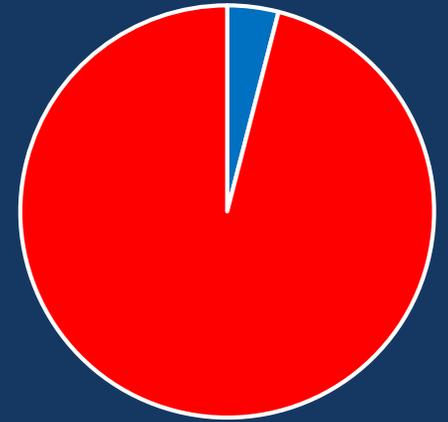


TOBACCO CESSATION MEDICATIONS



“COLD TURKEY METHOD”

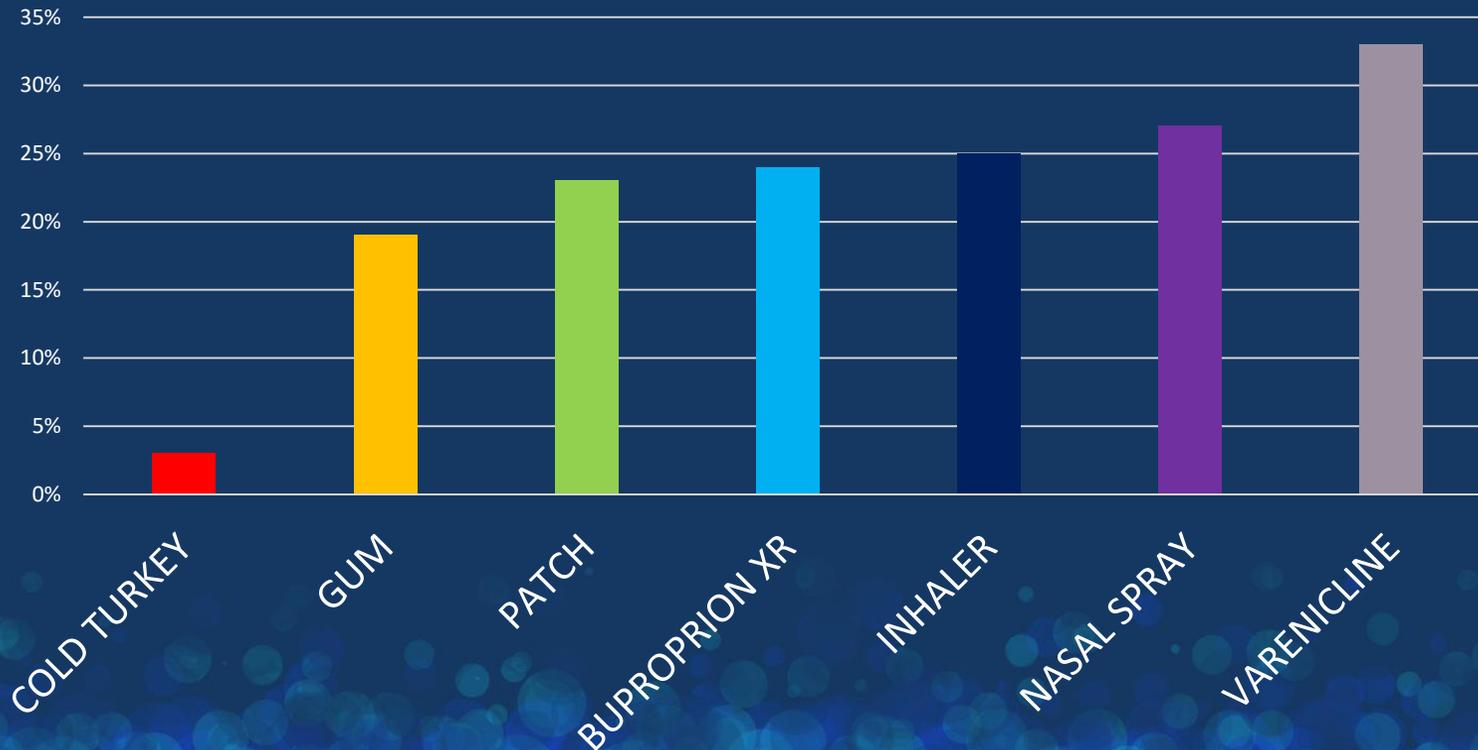
- 72% QUIT ATTEMPTS ARE WITHOUT TREATMENT
- 3-5% SELF QUITTERS ACHIEVE PROLONGED ABSTINENCE
- **MOST RELAPSE WITHIN 8 DAYS**



■ Successful ■ Unsuccessful

TOBACCO ABSTINENCE RATES

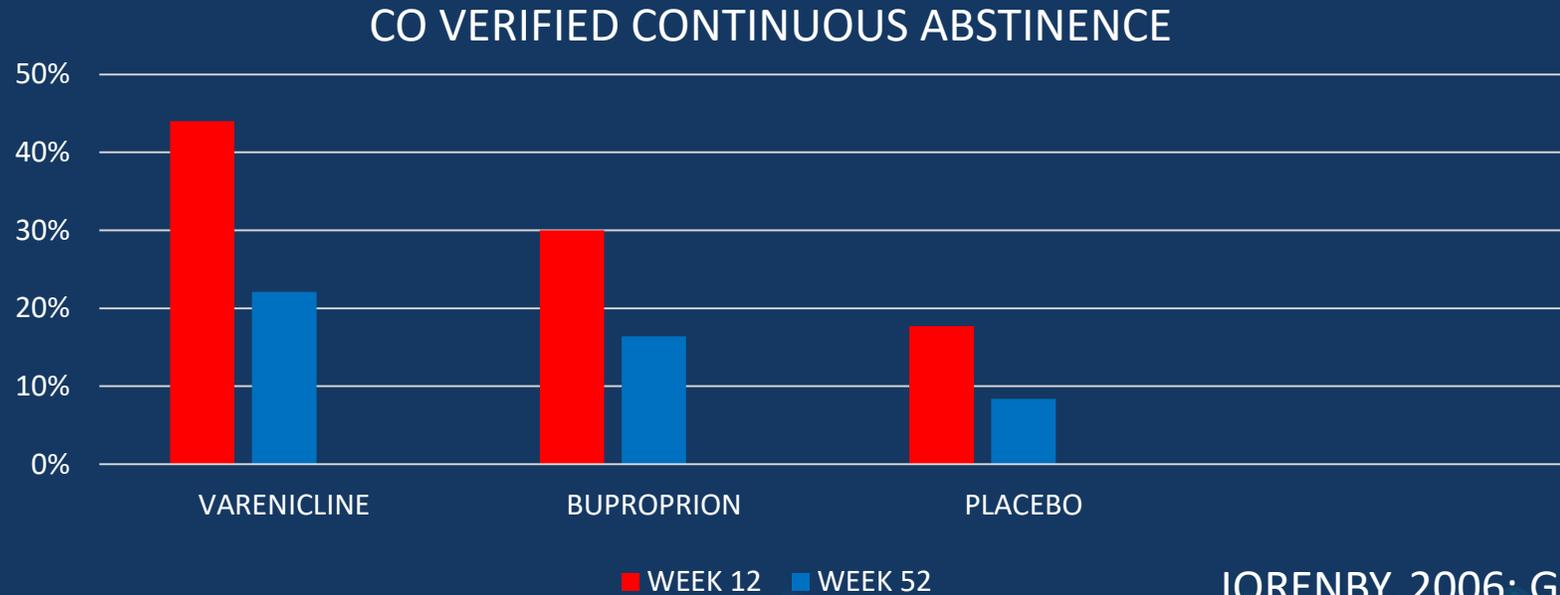
GENERAL POPULATION



EFFICACY OF NRT/MEDICATION IN SUD POPULATION

- COMMON ELIGIBILITY CRITERIA FOR STUDIES ELIMINATES 50% OF DAILY SMOKERS
- ALMOST NEVER INCLUDES
 - MENTAL ILLNESS
 - ADDICTIVE DISORDERS (OUTSIDE, OF COURSE, TOBACCO)

EFFICACY OF VARENICLINE VS. BUPROPRION VS. PLACEBO



JORENBY, 2006; GONZALES, 2006

BUT.....

- EXCLUDED
 - PSYCHIATRIC CO-MORBIDITIES
 - MEDICAL CO-MORBIDITIES
 - SUBSTANCE USE DISORDERS
- EAGLES TRIAL
 - **DESIGNED TO ADDRESS OUR POPULATION!**
 - STILL REQUIRED THOSE WITH SUD
 - SUSTAINED RECOVERY FOR ONE YEAR
 - NO MEDICAL INTERVENTIONS (MTD, BUP)



Summary

Are Pharmacotherapies Ineffective in Opioid-Dependent Smokers? Reflections on the Scientific Literature and Future Directions

Mark S. Miller PhD, Robert C. Nicot PhD

Current evidence suggests that most pharmacotherapies for opioid dependence are more effective in heavy smokers, an evidence that may be due to the presence of tobacco-induced changes in the pharmacokinetics of these medications.

Keywords: addiction, smoking, pharmacokinetics, tobacco, nicotine, withdrawal, relapse, treatment, maintenance, buprenorphine, naltrexone

Abstract

Most pharmacotherapies for opioid dependence are more effective in heavy smokers. This evidence may be due to the presence of tobacco-induced changes in the pharmacokinetics of these medications. The current evidence suggests that most pharmacotherapies for opioid dependence are more effective in heavy smokers, an evidence that may be due to the presence of tobacco-induced changes in the pharmacokinetics of these medications. The current evidence suggests that most pharmacotherapies for opioid dependence are more effective in heavy smokers, an evidence that may be due to the presence of tobacco-induced changes in the pharmacokinetics of these medications.

Introduction

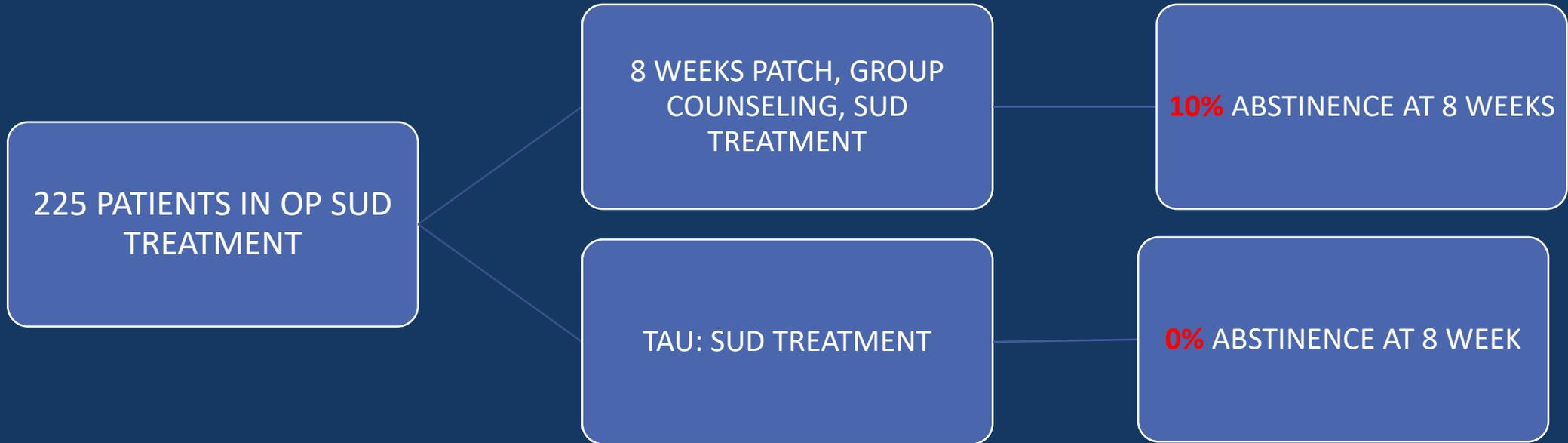
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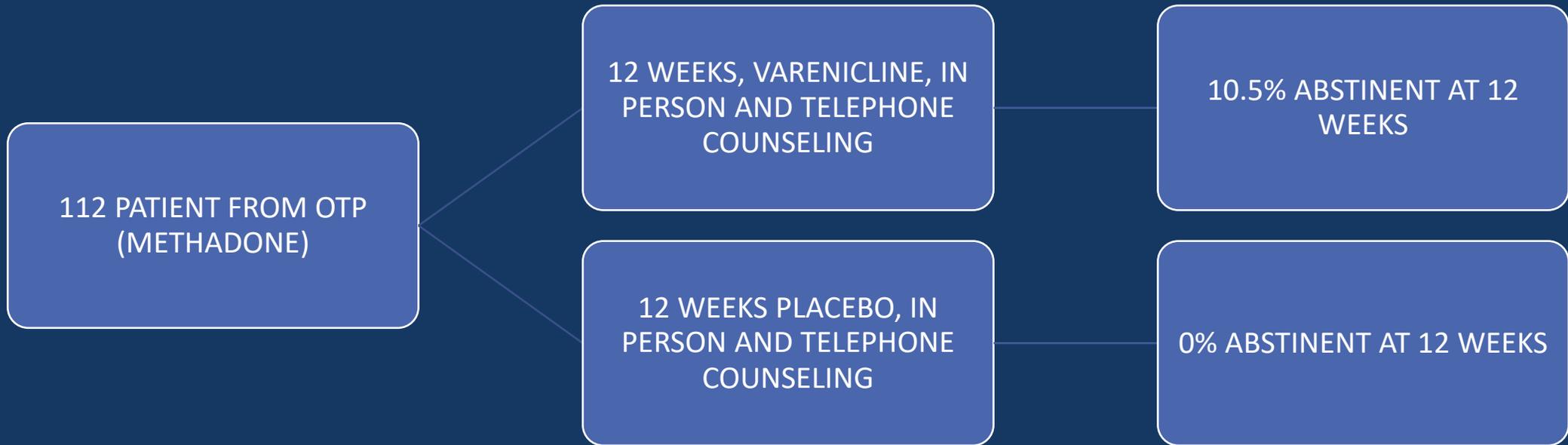
“ARE PHARMACOTHERAPIES INEFFECTIVE IN OPIOID-DEPENDENT SMOKERS? REFLECTIONS ON THE SCIENTIFIC LITERATURE AND FUTURE DIRECTION”

MILLER, SIGMON. NIC AND TOB RSCH 2015

RULE #1-WITHOUT TREATMENT, NO CESSATION



REID, JSAT, 2008



NAHVI, ADDICTION 2012

TREATMENTS HELP

EFFECTS MAY BE MODEST

DOING NOTHING DOES NOTHING

ONE PERSON ACHIEVING ABSTINENCE IS 100% FOR THEM

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OPTIMIZE EFFICACY

OPTIMIZE IMPLEMENTATION

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WHY ARE CESSATION RATES SO LOW IN SUD POPULATION?

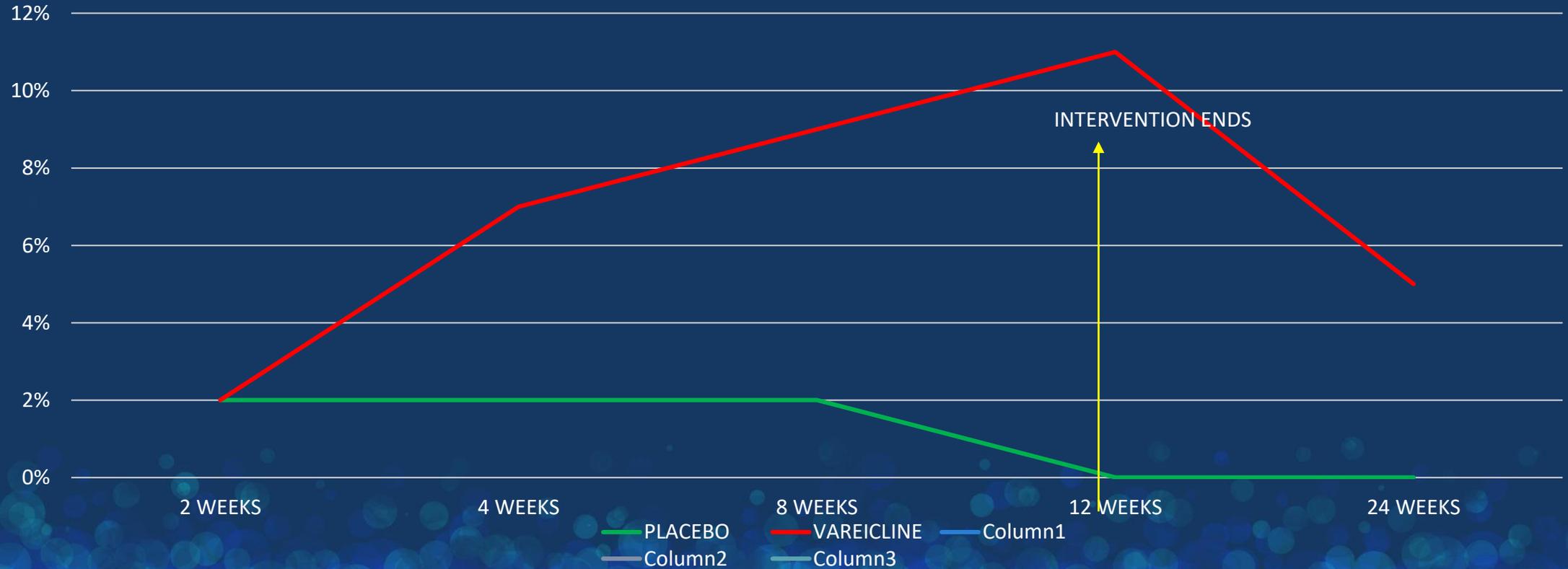
- LIMITATIONS IN OUR SYSTEMS OF CARE
- UNIQUE CHARACTERISTICS IN OUR PATIENT POPULATION

SHORT TERM TREATMENT INTERVENTIONS

- LIMITED INITIAL ABSTINENCE
- EFFECTS ARE NOT SUSTAINED

LIMITED INITIAL ABSTINENCE

CO VERIFIED ABSTINENCE %



PRE-CESSATION PATCH TREATMENT

- META ANALYSIS OF 4 STUDIES
- PATCH ON QUIT DATE VS. 6 WEEKS PRIOR
- “PRE-LOADING” DOUBLED ODDS OF QUITTING
- “PRE-QUIT” DECREASED ENJOYMENT
- “GIVING A BACKPACK” OF TOOLS BEFORE THE TRIP

SHIFFMAN AND FERGUSON, 2008

VARENICLINE “PRE-LOADING”

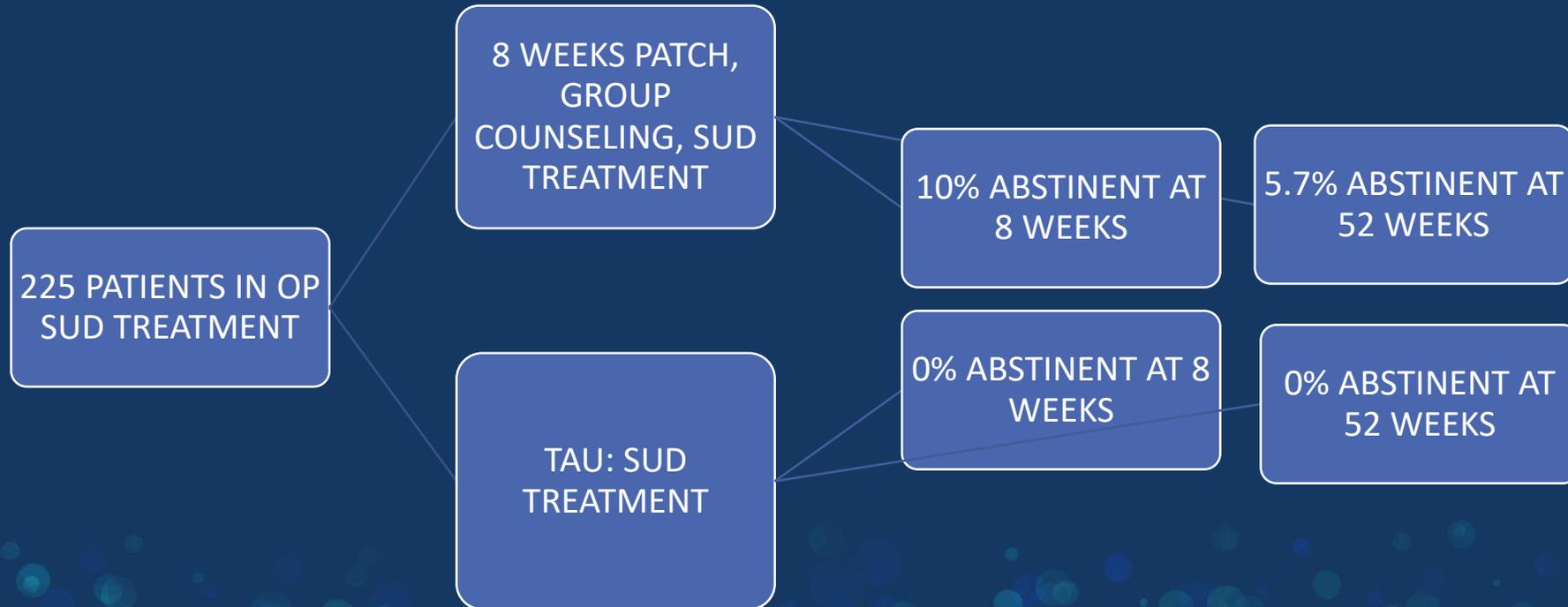
- RCT, 101 SMOKERS, RANDOMIZED TO:
 - VARENICLINE X 4 WEEKS PRE QUIT DATE
 - PLACEBO X 3 WEEKS, VARENICLINE X 1 WEEK PRE QUIT DATE
 - VARENICLINE X 3 MONTHS (BOTH GROUPS, AFTER QUIT DATE)
- PRELOADING:
 - REDUCED PREQUIT SMOKING ENJOYMENT
 - INCREASED 12 WEEK ABSTINENCE RATES (47.2% VS 28%)

HAJEK, ET AL, ARCH INT MED 2011

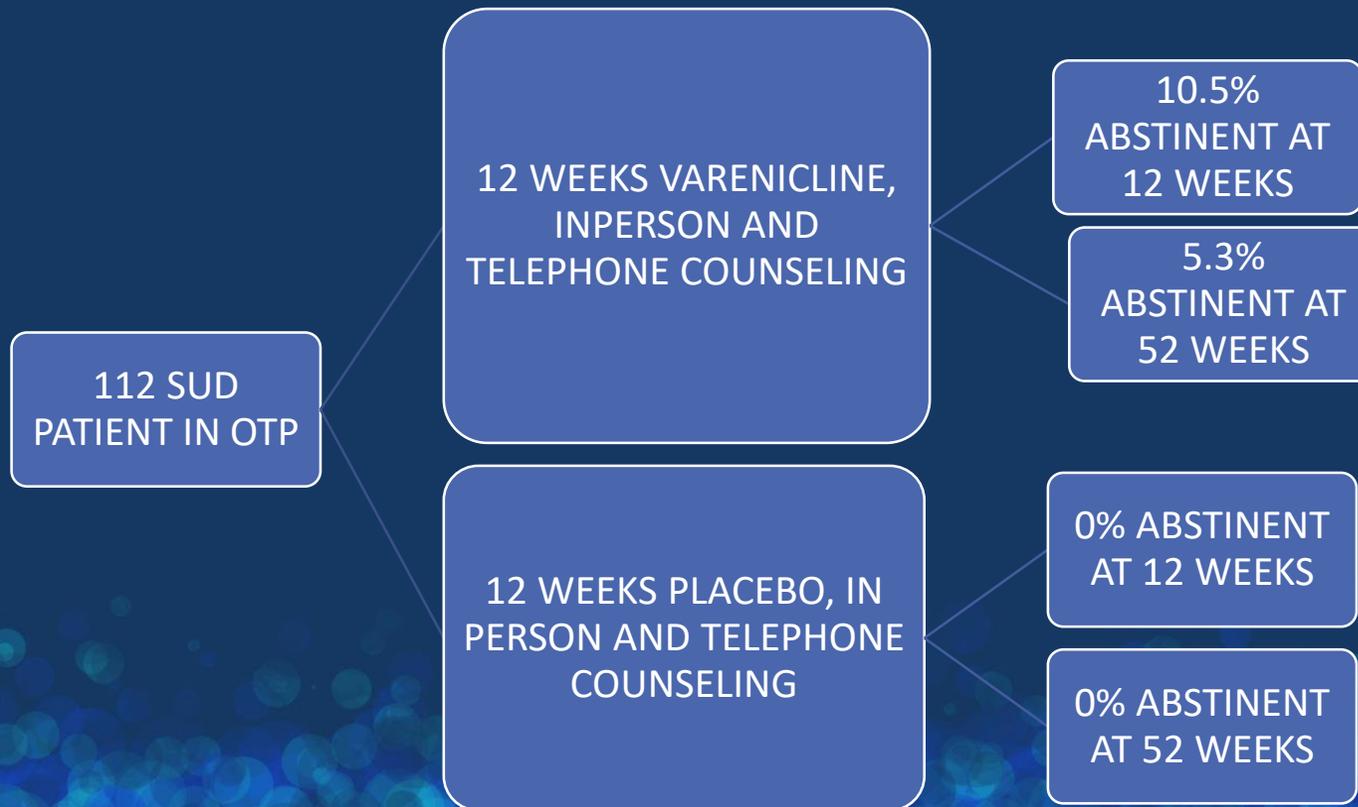
“EVEN WHEN I QUIT FOR A FEW MONTHS,
I ALWAYS GO BACK TO SMOKING...IT
NEVER LASTS!”

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CENTER

EFFECTS ARE NOT SUSTAINED WITH SHORT TERM TREATMENT



EFFECTS ARE NOT SUSTAINED WITH SHORT TERM TREATMENT



NAHVI, ADDICTION 2012

EXTENDED TREATMENT WORKS

| STUDY | N | INTERVENTION |
|---------------------|------|---------------------------|
| SCHNOLL ET AL, 2010 | 568 | PATCH 2 VS 6 MONTHS |
| HAYS ET AL, 2001 | 784 | BUPROPRION 7 VS 52 WKS |
| TONSTAD ET AL 2006 | 1210 | VARENICLINE 3 VS 6 MONTHS |
| SCNOLL ET AL, 2015 | 525 | PATCH 2 VS 6 VS 12 MONTHS |

ALL SHOWED:

LONGER DURATION=

INCREASED ABSTINENCE

INCREASED TIME TO
RELAPSE

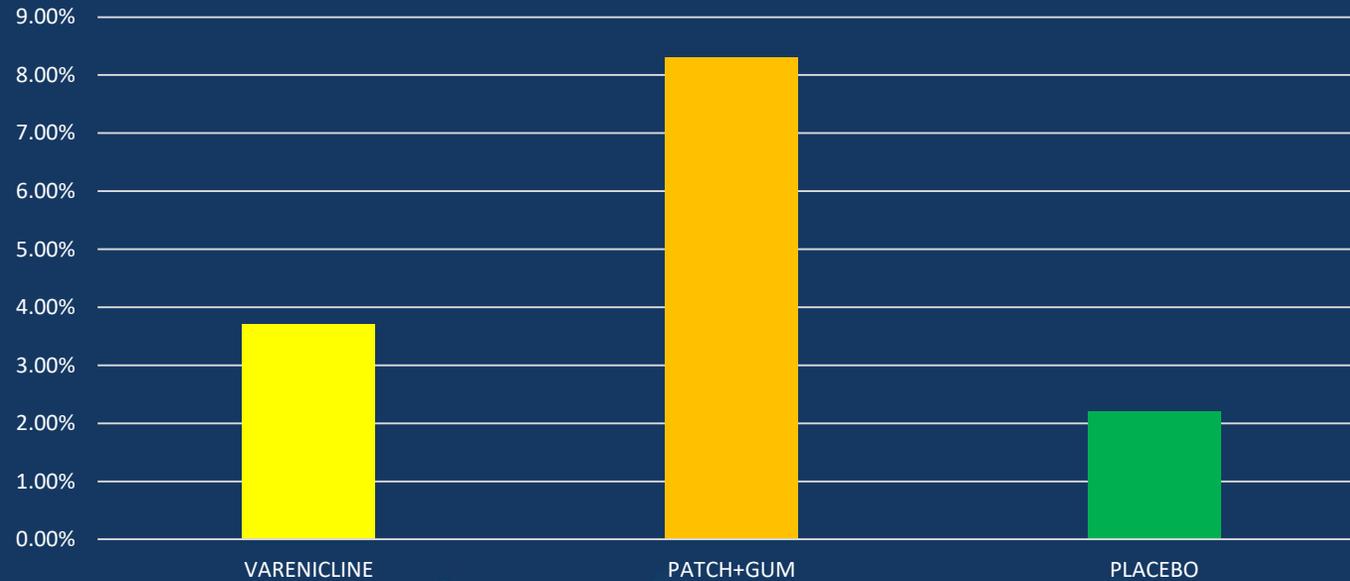
EXTENDED TREATMENT ALSO:

- INCREASED MOTIVATION :
 - MORE QUIT ATTEMPTS
 - CHANGE GOAL TO COMPLETE ABSTINENCE
 - ADVANCE CHANGE OF STAGE

**CESSATION RATES ARE LOW DUE
TO POOR ADHERENCE TO
TREATMENT PLAN**

LOW ADEHERENCE=LOW CESSATION

TOBACCO ABSTINENCE- 6 MONTH



ADHERENCE TO MEDS

34.2%

48.8%

34.4%

STEIN, DRUG ALC DEP 2013

ADHERENCE IMPROVES OUTCOMES

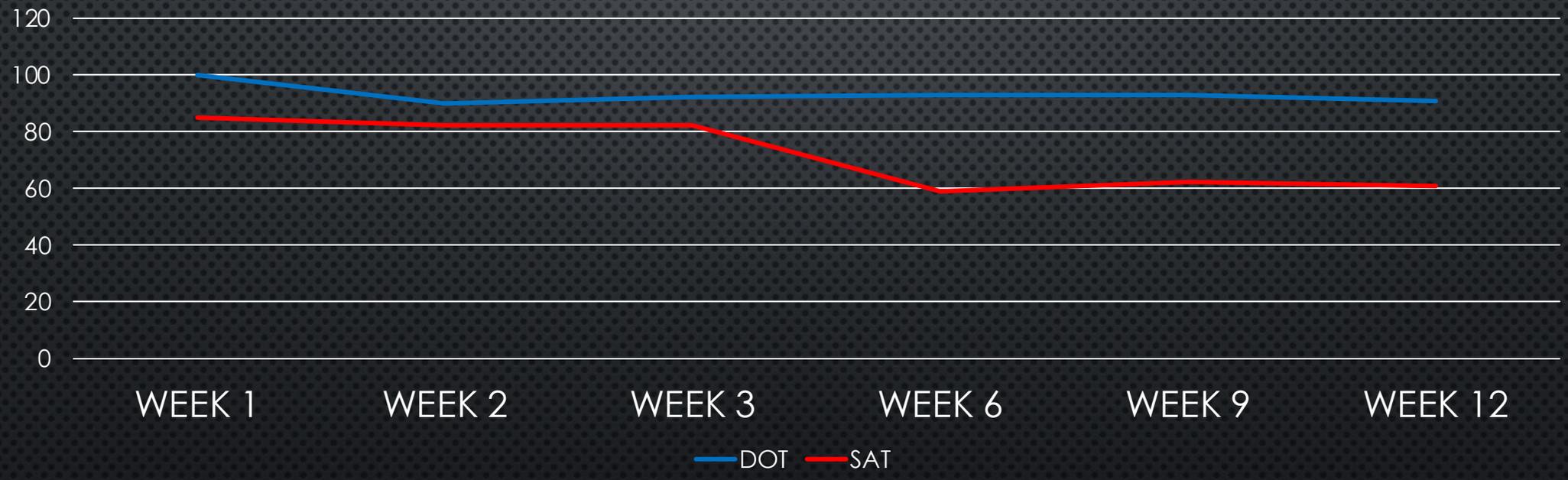
| PARTICIPANTS | FINDINGS |
|-------------------------|---|
| N=225; SMOKERS WITH SUD | #WEEKS ABSTINENT CORRELATED WITH: COUNSELING ADHERENCE NICOTINE PATCH ADHERENCE |
| N=383; SMOKERS WITH OUD | 44.1% NICOTINE PATCHES USED ON DAYS PATCHES WERE USED- 7.1X HIGHER SMOKING ABSTINENCE FEWER CIGS/DAY |

REID ET AL JSAT 2008
STEIN ET AL JGIM 2006

ADHERENCE MATTERS

- FEW STUDIES HAVE EVALUATED ADHERENCE AND IT'S IMPACT
- DIRECTLY OBSERVED THERAPY (DOT) IMPROVES ADHERENCE AND CLINICAL OUTCOMES
- ONE OF OUR FEW MODIFICABLE INTERVENTIONS!
- OPIOID TREATMENT PROGRAMS ARE THE CORNERSTONE FOR DIRECTLY OBSERVED THERAPIES (HEPATITIS C, HIV, TB)

VARENICLINE ADHERENCE





SO....

- HIGHER ADHERENCE WITH DOT
- CESSATION RATES DOUBLED
- BEST INTERVENTION IN OTP REPORTED (ON PAR WITH CONTINGENCY MANAGEMENT)
- SUSTAINABLE?
- IMPLEMENTED IN OTHER RECOVERY ENVIRONMENTS?

CONCLUSIONS

- SIGNIFICANT BURDEN OF TOBACCO USE IN OUD POPULATION
- NEED TO IDENTIFY TOBACCO USE AS PROBLEM
- BECOME FAMILIAR WITH EVIDENCE BASED TREATMENT (MEDICAL AND COGNITIVE)
- SYSTEM WIDE OPTIMIZE INTERVENTIONS TO ENHANCE EFFICACY
- SCALE INTERVENTIONS TO REACH UNIQUE POPULATION

CONCLUSIONS

- UNASSISTED CESSATION RATES 0%
- ASSISTED CESSATION RATES MODEST
- SHORT TERM TREATMENTS ARE INSUFFICIENT
- ADHERENCE IMPROVES OUTCOMES

QUESTIONS

CAROLYN WARNER-GREER

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BOWEN CENTER-ALLEN CO. OFFICE 260-471-3500

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